PHASE I BOOK EXPLOITATION SOV/5208

Zarkh, Isaak Moiseyevich, and Abram Grigor'yevich Rabinovich

Sborka i regulirovka radiotekhnicheskikh ustroystv (Assembly and Adjustment of Radio Engineering Devices) Leningrad, Sudpromgiz, 1960. 475 p. Errata slip inserted. 17,000 copies printed.

Scientific Ed.: P. A. Obnovlenskiy; Ed. of Publishing House: V. M. Zavel'skaya; Tech. Ed.: P. S. Frumkin.

PURPOSE: This book is intended for technical personnel in the radio industry. It may also be used as a textbook by students in schools of higher education and radio engineering educational institutions.

COVERAGE: The authors explain in simple language the technology of producing and assembling components used in various radio engineering equipment and describe procedures for installing, checking, and testing the individual devices. The book is based on the generalization of experience gathered by specialized plants and

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on data from numerous special and periodical publications. Chs. I, II, III, VI, VII, VIII, IX, XI, XII, XIV, XV, XVI, XVII, XVIII, and XX were written by I. M. Zarkh, Engineer, and Chs. IV, V, X, XIII, and XIX by A. G. Rabinovich, Engineer. M. G. Zaydenberg participated in writing Ch. XX. The authors thank Stalin prize winner G. S. Likhachev for his cooperation. There are 63 references, all Soviet (including 1 translation).

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TSVETKOV, V.D., inzh.; TOFPENETS, V.A., inzh.; ZARKH, S.B., inzh.

Automatic feeding of drum-type multiple-position machine-tool units. Mash. Bel. no.2:31-39 '60. (MIRA 16:7)

(Feed mechanisms)

TSEVTKOV, V.D.; ZARKH, S.B.

The AM223 automatic four-position eight-spindle boring machine.
Biul.tekh.-ekon.inform. no.9:41-42 '61. (MIRA 14:9)
(Drilling and boring machinery)

KUSHNAREVA, T.I.; ZHURAVLEV, V.S.; ZARKH, V.P.; SAAR, A.A.

Stratigraphy and tectonics of the basement of the southwestern part of the Timan Range region. Dokl. AN SSSR 162 no.3:632-635 My '65. (MIRA 18:5)

1. Submitted January 28, 1965.

ZARKH, Ye.N.

Absorption spectra of the ceretrospinal fluid of mental patients.
Vop. psikh. no. 3:366-373 '59. (MIRA 13:10)
(SPECTRUM ANALYSIS) (CEREBROSPINAL FLUID) (MENTAL ILLNESS)

GANASSI, Ye.E.; ZARKH, Ye.N.; KONDAKOVA, N.V.; EYDUS, L.Kh.

Physicochemical study of the mechanism of enzyme inactivation. Report No.1. Thermal inactivation of myosin and pepsin, intact and following irradiation. Biofizika 10 no.6:966-973 '65. (MIRA 19:1)

1. Institut biologicheskoy fiziki AN SSSR, Moskva. Submitted April 29, 1965.

ZARKH, Ye.N.; ZELIKINA, T.I.; SHABADASH, A.L.; SHUNGSKAYA, V.Ye.

Methods of studying certain characteristics of the tigroid in the spiral cochlear ganglion of the inner ear. Biofizika 6 no. 2:233-237 '61. (MIRA 14:4)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(EAR—INNERVATION)

AREF'YEVA, A.M.; GUTKINA, A.V.; YENENKO, S.O.; ZARKH, Ye.N.; SHUNGSKAYA,
V.Ye.

Cytochemical and luminescence microscopic study of nerve cells in a tissue culture. TSitologiia 7 no.4:531-537 Jl-Ag '65.
(MIRA 18:9)

1. Laboratoriya biofiziki zhivykh struktur Instituta biologicheskoy fiziki AN SSSR, Moskva.

SOV/19-58-6-131/685

AUTHOR: Zarkhe, S. M.

TITLE: A Device for Automatically Regulating the Temperature of Cooling Water in Cooling or Lubrication Systems of Diesel Locomotive Engines (Ustroystvo dlya avtomaticheskogo regulirovaniya temperatury okhlazhdayushchey vody v sisteme okhlazhdeniya ili smazki dvigatelya teplovoza)

PERIODICAL: Byulleten'izobreteniy, 1958, Nr 6, p 33 (USSR)

Abstract: Class 20b, 14_{50}. Nr 113560 (567619 of 23 Febr 1957)

Submitted to the Committee for Inventions and Discoveries at the Ministers Council of USSR. An automatic device changing the capacity of a fan in accordance with the temperature of the liquid passing out of the cooling system, provided with a refrigerator, a fan, driven by the main engine, and a

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SOV/19-58-6-131/685

A Device for Automatically Regulating the Temperature of Cooling Water in Cooling or Lubrication Systems of Diesel Locomotive Engines

bellows thermostat (sil'fon) in the path of the liquid as it leaves the system. To reduce the fuel consumption for the fan drive and ensure smooth control, the device is equipped with an axial fan with tiltable blades controlled by a hydraulic cylinder with a slide valve coupled with the bellows thermostat and the piston rod of the hydraulic cylinder.

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BRAILOVSKIY, inzhener; ZARKHI, inshener.

Experience in making precast reinforced concrete slabs. Biul. stroi.tekh. 13 no.1:11-13 Ja '56. (MLRA 9:5)

1. Trest Donbasspromstroy.

(Concrete slabs)

[illegible], A. [illegible]

"Experimental Investigations of the Distribution of Reactive Pressures of the Ground on a Grooved Wall and a Separate Pole During the Action of a Horizontal Force," Tr. Leningr. In-ta Inzh. Vodn. Transp, No 21, 1954, pp 146-164

This is a description of the laboratory experimental investigations of the distribution of the forces of repulsion of a friable medium (sand) with respect to the height of a grooved wall for various displacements of the wall. Several different types of support and degrees of rigidity of the wall are considered. (RZhMekh, No [illegible], 1955)
SC: Sum.No. 713, 9 Nov 55

SOV/124-57-4-4781

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 130 (USSR)

AUTHOR: Zarkhi, A. Z.

TITLE: The Calculation of a Horizontal Load on a Flexible Wall in Accordance With a Permissible Degree of Deflection (Raschet gibkoy stenki na gorizontal'nuyu nagruzku po dopuskayemym progibam)

PERIODICAL: Tr. Leningr. in-ta inzh. vod. transp., 1956, Nr 23, pp 53-64

ABSTRACT: Ref. RZhMekh, 1955, abstract 2617

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ZARKHI, A.Z., kand.tekhn.nauk

Method of designing a single pile for horizontal loading according to deformation specifications. Trudy LIIVT no.26:112-125 '59.
(MIRA 14:9)

(Piling (Civil engineering))

ZARKHI, A.Z., kand.tekhn.nauk, dotsent; NERPIN, S.V., doktor tekhn.nauk, prof.

Determining stresses in sections of a trestle-type embankment. (MIRA 14:9)
Trudy LIVT no.19:3-10 '61.
(Embankments) (Strains and stresses)

ZARKHI, A.Z., kand.tekhn.nauk, dotsent

Experimental investigation of trestle-type embankments with anchor piles. Trudy LIVT no.19:11-21 '61. (MIRA 14:9)
(Embankments--Models) (Piling (Civil engineering))

NERPIN, Sergey Vladimirovich, doktor tekhn. nauk, prof.; KOTOV, Aleksandr Ivanovich; RASHA, Dmitriy Nikolayevich; ZARKHI, A.Z., kand. tekhn. nauk, dots., retsenzent; MORARESKUL, N.N., kand. tekhn. nauk, dots., retsenzent; SHTENTSEL', V.K., red.; VOLCHOK, K.M., tekhn. red.

[Footings, basements, and engineering geology] Osnovaniia, fundamenty i inzhenernaia geologiia. Pod obshchei red. S.V. Nerpina. Moskva, Izd-vo "Rechnoi transport," 1963. 360 p. (MIRA 16:7)

(Engineering geology)

ZARKHI, A.Z., dotsent, kand. tekhn. nauk

Determination of soil pressure on retaining structures.
Trudy LIVT no.66:5-8 '64. (MIRA 19:2)

ZARKHI, B. N.

Zarkhi, B. N. "Observations on gemeralopia in the years of the Great Fatherland War," Trudy Medinstituta (Izhev. gos. med. in-t), Vol. VII, 1949, p. 220-23

SO: U-3850, 16 June 53, (Letopsis 'Zhurnal 'nykh Statey, No. 5, 1949)

ZARKHI, I.G., inzhener; BROVKIN, Ye.P., inzhener

Experience in designing reinforced concrete power poles. Transp.stroi. 6 no.7:13-15 Jl '56. (MIRA 9:10)
(Electric lines--Poles)

24856 S/106/61/000/005/004/006
A055/A133

9,9560 (1139,1159,1161)

AUTHOR: Zarkhi, L.D.

TITLE: Analysis and calculation of a junction transistor-oscillator operating in undervoltage conditions

PERIODICAL: Elektrosvyaz', no. 5, 1961, 33 - 40

TEXT: In contrast to overvoltage conditions, the voltages at the input and output of a transistorized oscillator have, in the case of undervoltage conditions, a form approaching the sinusoidal shape. Therefore, it is appropriate to use, in this case, the quasi-linear method for the design of the oscillator. Analytical expressions for the approximate dependence of the average transistor parameters on signal amplitude and on supply voltages were already deduced by the author in an earlier article [Ref. 3: L. D. Zarkhi. Osobennosti raboty ploskostnogo poluprovodnikovogo trioda pri sinusoidal'noy forme napryazheniy nayego vkhode i vykhode (Operation Peculiarities of Transistors with Sinusoidal Voltage Shape at their Input and Output) Radiotekhnika i Elektronika, 1960, v. V, No. 7]. These expressions are employed in the present article. It is supposed that a self-bias resistance considerably greater than the transistor d-c input resistance is inserted into the

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emitter d-c circuit, the direct component of the emitter current remaining thus practically constant during the oscillation-generating process; the phase-shift this insertion provokes in the feedback circuit is compensated by introducing into the external emitter-base circuit a resistance in series with the impedance. It is also assumed that the transistor parameters $S = I_{NKZ}/U_0$ is a real magnitude and that the amplitude of the a-c voltage at the transistor output does not exceed 0.6 - 0.7 E_k (E_k being the collector bias-voltage). Account must also be taken of the fact that the expressions for average parameters used in the article are correct at frequencies not exceeding the transistor critical frequency. The schematic diagram of the examined oscillator is shown in Figure 1. Z_1, Z_2 and Z_3 are the impedances of the external circuit, and S the semiconductor-triode. For the calculation of the first approximation of the amplitude and of the first correction of the frequency of steady-state oscillations, the author uses the equation (1) obtained by V. A. Zore [Ref. 4: K teorii trekhelektrodnogo elektronnogo generatora s obratnoy svyaz'yu (On the Theory of the Three-Electrode Electronic Oscillator with Feedback) ZhTF, 1956, v. XXVI, No. 1]:

$$I_H - I_B \left[\frac{\Delta 13}{\Delta 11} \right]_{e=o} = U_{outp.} \frac{1}{[\Delta_{11}]_{e=o}} \left\{ \left[\frac{\partial \Delta''}{\partial e} \right]_{e=o} + \omega_1 \left[\frac{\partial \Delta''}{\partial \omega} \right]_{e=o} \right\}, \qquad (1)$$

where e is the "small" parameter; Δ_{ik} are the minors of the system determinant in the k-th line and i-th column; Δ'' is the determinant obtained from the system determinant by striking out the first and third lines and columns; ω_1 is the first frequency-correction. In order to eliminate currents I_H and I_B, as well as voltage $U_{outp.}$, from equation (1), the two following equations can be used:

$$\left.\begin{aligned} U_{\text{вых.}} &= I_{\text{б}}[\alpha Z_{\text{к}} - (1-\alpha) Z_{\text{э}}] - I_{\text{к}}(Z_{\text{к}} + Z_{\text{э}})(1-\alpha) \\ U_{\text{вых}} &= I_{\text{б}}\left[\alpha Z_{\text{к}} + R_{\text{б}} - \frac{\Delta_{33}}{\Delta''}\right] - I_{\text{к}}\left[(1-\alpha) Z_{\text{э}} - \frac{\Delta_{13}}{\Delta''}\right] \end{aligned}\right\}. \qquad (2)$$

Taking into account the four relations:

$\omega\tau = \omega \dfrac{C_e R_e R_B}{R_e + R_B}$ = const. for $f = (0.1 - 1) f_{crit}$; $\dfrac{R_B}{R_e} \leqslant 1$ and $\left(\dfrac{1}{\omega C_e R_e}\right)^2 \leqslant 1$,

$S = \dfrac{\alpha}{Z_e (1 - \alpha_1)}$ where S is a real magnitude, $Z_k \approx 1/i\omega C_k$,

$$Z_1 = r_1 \pm iX_1, \quad Z_2 = r_2 \mp iX_2, \quad Z_3 = r_3 \pm X_3$$

(the upper sign corresponding to inductive feedback and the lower to capacitive feedback), and $r_1 + r_2 + r_3 = r$; $X_2 = p\rho$; $\frac{\rho}{r} = Q$; $\frac{\rho^2}{r} = R_{oe}$; $\frac{X_3}{X_1} = K$, and considering $2(1 + K)\frac{\omega_1}{\omega_2}$ and $2\,pQ\,\omega\tau\frac{\omega_1}{\omega}$ as negligible with respect to unity, the author obtains, by solving equations (2), the equation for the balance of the oscillation-amplitudes

$$S \approx \frac{\frac{1+\kappa}{\kappa p^2 R_\alpha} - \omega\tau\omega C_\kappa \mp \frac{\omega\tau}{R_B}\,\frac{r_1(1+\kappa) + r_2(1-\kappa) - r_3(1+\kappa)}{p\rho}(1+\kappa)}{1 \pm p\rho\omega C_\kappa} \qquad (3)$$

and determines theh the first frequency-correction from the following relation:

$$\frac{\omega_1}{\omega} \approx -\frac{\frac{\omega\tau}{pQ} \pm S\left[r_3(1+\kappa) + \kappa r_2\right] + \frac{\kappa^2}{1+\kappa}p\rho\frac{\omega\tau}{R_B} +}{2\left(1 \mp \frac{1-\kappa}{R_B}\kappa p\rho\omega\tau\right)} \rightarrow$$

$$\rightarrow \frac{+\frac{\omega C_x p\rho}{R_B(1+\kappa)}\left[S R_B^2 + R_B(1-\kappa-\kappa^2) \mp \kappa p\rho\omega\tau\right]}{2\left(1 \mp \frac{1-\kappa}{R_B}\kappa p\rho\omega\tau\right)}. \qquad (4)$$

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Equations (3) and (4) are valid for any type of transistorized oscillator with external feedback. In order to determine the amplitude of the steady-state oscillations, it is necessary to know the dependence of the parameters appearing in (3) on the signal-level and on the power-supply conditions. The following relationships were obtained by the author in his previous article:

$$\left.\begin{aligned} \frac{1}{R_n} &= 2\, f_2(x)\, \frac{q}{\varkappa T}\, I_{eo}\, A; \\ \omega C_0 &= 2 f_2(x)\, \frac{q}{\varkappa T}\, I_{eo}\, b; \\ S &\approx \omega C_e\, \frac{b}{(1-a)^2 + b^2} \end{aligned}\right\} \qquad (5)$$

where $f_2(x) = \frac{I_1(x)}{I_0(x)}$; $x = n \frac{q}{\varkappa T} U_{inp}$. I_1 and I_0 are here Bessel functions of zero and first order (imaginary argument); $n = 1.54$; $q/\varkappa T = 39\ 1/\beta$ at $T = 300°$; a and b are the active and reactive components of the current amplification factor α. If the active component of the external impedance Z_1 is zero and if $R_n \gg X_1$, then:

$$\left.\begin{aligned} r_1 &\approx \frac{X_1^2}{R_n} = \frac{p^2\rho^2}{R_n(1+\kappa)^2} \\ \frac{1}{p^2 R_\alpha} &= \frac{1}{p^2 R^*_\alpha} + \frac{1}{R_n(1+\kappa)^2};\quad \frac{1}{pQ} = \frac{1}{pQ^*} + \frac{p\rho}{R_n(1+\kappa)} \end{aligned}\right| \qquad (6)$$

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where R_{oe} and Q are the equivalent resistance and the Q-factor of the circuit. Taking into account that at frequencies below the critical one:

$$\frac{b}{(1-a)^2 + b^2} > \frac{r_2 - r_3}{p\,\xi} - \frac{k}{Q} + \omega C_k R_B$$

and substituting (5) and (6) in (3), the author finally obtains:

$$f_2(x)\left[\frac{b^2}{(1-a)^2 + b^2} - \frac{A}{k(1+k)}\right] = \frac{0.0128}{I_{eo}}\,\frac{1+k}{kp^2 R_{pe}}. \qquad (7)$$

When U_{inp} tends towards zero, function $f_2(x)$ tends towards 0.5. The self-excitation condition for the oscillator is consequently:

$$\left[\frac{b^2}{(1-a)^2 + b^2} - \frac{A}{k(1+k)}\right] \quad \frac{0.0256}{I_{eo\,min}} \cdot \frac{1+k}{kp^2 R_{oe}}, \qquad (8)$$

where $I_{eo\,min}$ is the threshold value of the direct component of emitter current, at which oscillations appear. The combined solution of (7) and (8) results in

$$2 f_2(x)\, B' = \frac{I_{eo\,min}}{I_{eo}} \qquad (9)$$

where $$B' = \frac{\frac{b^2}{(1-a)^2 + b^2} - \frac{A}{K(1+K)}}{\left[\frac{b^2}{(1-a)^2 + b^2} - \frac{A}{K(1+k)}\right] U_{inp.} \rightarrow 0}$$

Equation (9) determines the amplitude of the oscillations. The dependence of B' on I_{eo} was determined experimentally. The experimental analysis allows to state that, at frequencies below the critical one, and with an error not exceeding (5 - 7)%, parameter B' is equal to unity and the amplitude-balance condition takes the simple form of:

$$2f_2(x) = I_{eo\ min.}/I_{eo} \qquad (9')$$

Equation (9') does not include the dependence of the oscillation-amplitude on the collector voltage E_k, but this dependence plays no significant part here. The obtained results show that the average transistor parameters - and, therefore, the steady-state phase-relations in the oscillator also - are independent of the amplitude of the oscillations. Knowing the steady-state value of the voltage amplitude at the transistor input, it is easy to find the voltage at the output of the oscillator. For approximate calculations, this voltage is given by the expression:

$$kU_{outp.} \approx (1 + k)\, U_{inp.} + 1.6 \cdot I_{eo}\, Z_3.$$

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The combined solution of equations (4), (5) and (9') permits to give another form to the expression for the first correction of the oscillation-frequency:

$$\frac{\omega_1}{\omega} \approx -\frac{1}{2\left[1 \mp \kappa(1-\kappa)p\rho b \frac{q}{\varkappa T} I_{\underset{e}{э0}\,\text{макс}}\right]} \left\{\omega\tau\left[\frac{1}{pQ} + I_{\underset{e}{э0}\,\underset{\text{min}}{\text{макс}}} \frac{q}{\varkappa T} \frac{p\rho A}{(1+\kappa^2)}\right] + \right.$$

$$+ \omega C_\kappa \left[\omega\tau\left[\frac{b}{(1-a)^2+b^2} + 1 - \kappa - \kappa^2 \mp I_{\underset{e}{э0}\,\underset{\text{min}}{\text{макс}}} \frac{q}{\varkappa T} p\rho\kappa b\right] \pm \right.$$

$$\left. \pm I_{\underset{e}{э0}\,\text{макс}} \frac{q}{\varkappa T} \frac{b^2}{(1-a^2)+b^2}\left[r_3(1+\kappa) + \kappa r_2\right] + I_{\underset{e}{э0}\,\underset{\text{min}}{\text{макс}}} \frac{q}{\varkappa T} \kappa^2 b \frac{p\rho}{1+\kappa}\right\}. \quad (10)$$

(10)

As to parameters τ and C_k, which depend on the d-c regime, they are determined by:

$$\omega\tau \approx m + fI_{eo}^3; \quad C_k \approx C_{ko}\sqrt{\frac{E_{ko}}{E_k}}, \quad (11)$$

Solving equation (10) and taking into account (11), it is possible to obtain the magnitude of the first correction of frequency ω_1 and $\omega \approx \omega_0 + \omega_1$. A numerical

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example shows that in the case of a П6Г No. 1 (P6G)triode used in an oscillator-circuit with capacitive feedback, the error in the calculation of the oscillation-frequency does not exceed 0.1%, whereas the relative detuning of the circuit is approximately equal to 1%. Conclusions of the author: The above analysis allows to state that a stable operation of the transistorized oscillator is possible, in the overvoltage, as well as in the undervoltage condition. The insertion of a sufficiently large resistance (10 kilohms, for instance) in the circuit of the direct component of emitter-current ensures undervoltage oscillator conditions for considerable variations of I_{eo}. The variation-limits of I_{eo}, within which the oscillation regime remains an undervoltage regime, can be widened by decreasing R_{oe}. The reduction of the feedback factor increases somewhat the intensity of the conditions. If the oscillation frequency does not exceed the critical frequency of the triode, the amplitude of the steady-state oscillations is determined essentially by the direct component of I_{eo}. When formula (9') is used for calculations, the error does not exceed 2 - 3% at the frequency equal 0.2 f_{crit}, and 5 - 7% at the critical frequency. The steady-state value of the oscillation frequency depends on the parameters of the external circuit, on the transistor type and on the supply voltages. Its variation with the supply voltages is essentially associated with the fact that a variation of the collector voltage E_k causes a variation of the

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capacitance C_k of the collector junction. There are 8 figures, 1 table and 4 references; 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Oakes. Design considerations of junction-transistor oscillator for the conversion of power from direct to alternating current. Proc. IRE., 1957, p. B, v. 104, No. 15.

SUBMITTED: August 19, 1960.

Figure 1:

1 - outp.
2 - inp.
3 - e
4 - B

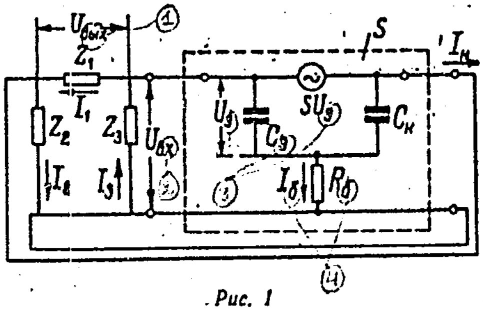

Рис. 1

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9,4310

AUTHOR: Zarkhi, L.D.

TITLE: Junction Transistor Operating Characteristics with Sinusoidal Input and Output Voltages

PERIODICAL: Radiotekhnika i elektronika, Vol 5, No 7, 1960, pp 1145-1157 (USSR)

ABSTRACT: A large-signal theory of the hybrid-π equivalent circuit of a junction transistor is developed. Arbitrary constants introduced into the analytical expressions obtained permit taking into account measurement results to give the approximate dependence of the mean parameters of the hybrid-π equivalent circuit on the signal level and supply voltages. As in the small-signal theory, the calculation is based on solution of the diffusion equation. In the derivation sinusoidal input and output signals have been assumed, and all harmonics higher than the fundamental have been neglected. In Soviet alloy transistors P1 and P6 the transistor input impedance depends to a higher degree on signal level than Z_c. Since the α-cut-off frequency is signal-level dependent, but varies little at high input signals, the author proposes taking this value of the α-cut-off frequency,

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Junction Transistor Operating Characteristics with Sinusoidal Input and Output Voltages

denoted by $f_{cr\ min}$ as a basic transistor characteristic. At high signal level the transistor operation is practically completely defined by the values of the 5 parameters C_c, τ, A, $f_{cr\ min}$ and $(1 - \alpha_0)_{max}$, which are independent of signal level. It is recommended that these 5 parameters be measured in production and listed in the transistor specifications. There are 11 figures, 1 table and 6 Soviet references.

SUBMITTED: July 29, 1959

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S/106/61/000/009/005/008
A055/A127

9.2560(1154,1161)

AUTHOR: Zarkhi, L. D.

TITLE: Stabilization of the frequency of junction-transistor self-oscillators.

PERIODICAL: Elektrosvyaz', no. 9, 1961, 32 - 38

TEXT: The author examines the effect exerted on the frequency of junction-transistor self-excited oscillators by the nonconstancy of the load, of the supply voltages and of the ambient temperature. The analysis is based on formulae derived in an earlier article [Ref. 1: Issledovaniye i raschet avtogeneratora na ploskostnom poluprovodnikovom triode v nedonapryazhennom rezhime (Analysis and Calculation of a Junction Transistor Oscillator Operating in Undervoltage Conditions), Elektrosvyaz;, 1961, no. 5]. Effect of the load. - Considering only the case of a purely active load and neglecting the term $k(1 + k)p\rho\frac{q}{\chi T}I_{e0\ min}$ in formula (10) of his earlier article, the author obtains the following expression for the first correction of the oscillation frequency: 4

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Stabilization of the frequency ....

$$\omega_1 \approx -\frac{1}{2}\omega\left\{\frac{p\rho\omega\tau}{p^2R_{oe}}\left[1+\frac{A}{\kappa(1+\kappa)}\frac{1}{F-\frac{A}{\kappa(1+\kappa)}}\right]+\right.$$

$$+\omega C_\kappa\frac{p\rho}{1+\kappa}\left(\omega\tau\frac{F}{b}+1-\kappa-\kappa^2\right)\mp\frac{\omega C_\kappa(p\rho)^2 b}{p^2R_{oe}(1+\kappa)\left(F-\frac{A}{\kappa(1+\kappa)}\right)}\pm$$

$$\left.\pm\frac{\left(r_3+\kappa\frac{(p\rho^2)}{p^2R_{oe}}\right)F}{\kappa p^2R_{oe}\left(F-\frac{A}{\kappa(1+\kappa)}\right)}+\frac{p\rho\kappa b}{p^2R_{oe}(1+\kappa)\left(F-\frac{A}{\kappa(1+\kappa)}\right)}\right\} \qquad (1)$$

4

the upper sign corresponding here to inductive feedback, and the lower to capacitive feedback. On the basis of this expression he determines the condition that must be satisfied to ensure the independence of the frequency on the load resistance. This condition is: a) in the case of inductive feedback:

$$\omega\tau F-\omega C_k p\rho\frac{b}{1+k}+F\left(\frac{r_3}{kp\rho}+\frac{2r_2}{p\rho}\right)+\frac{k}{1+k}\,b=0, \qquad (2)$$

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Stabilization of the frequency ....

b) in the case of capacitive feedback;

$$\omega\tau F + \omega C_{K} p\rho \frac{b}{1+k} \left(- F \left(\frac{r_{\text{э}}}{kp\rho} + \frac{2r_{\text{б}}}{p\rho} \right) + \frac{k}{1+k} b = 0 . \qquad (3)$$

The examination of (2) and (3) shows that, practically, the independence condition can never be satisfied in the inductive feedback case. In the capacitive feedback case, condition (3) is satisfied, provided the term

$$F \left(\frac{r_{\text{э}}}{k} + 2\ r_{\text{б}} \right) \frac{1}{p\rho}$$

is sufficiently great. Equation (3) shows which of the parameters must be varied for reducing to a very small level the variation of the frequency with the load resistance. Effect of the supply voltages. - If the emitter and the collector are supplied by the same power source, it is possible to determine the conditions, which, when satisfied, will ensure a constant oscillation-frequency, in spite of the variation of the collector junction capacitance C_K and of the transistor input circuit time-constant τ. To determine these conditions the author uses a slightly modified form of formula (1). $I_{\text{э}0}$ min is here the value of the emitter

Card 3/5

current (I_{e0}) at which oscillations arise,

$$C_K \approx C_{K0}\sqrt{\frac{4.8}{E_k}} \quad \text{and} \quad \tau = m + 1\, I_{e0}^3 \qquad (5)$$

The emitter being connected to the power supply through a sufficiently large resistance R,

$$I_{e0} \approx \mathcal{E}\frac{E_k}{R} \qquad (6)$$

where $\mathcal{E} = \frac{E_K}{E_e}$. The condition for the independence of the oscillation-frequency on the supply voltage is:

$$E_k^{3.5} = 0.365\,\frac{C_{k0}}{F1\left(\frac{\mathcal{E}}{R}\right)^3}\left[(8R_b + 1 - k - k^2)\,\frac{0.0256}{k\,I_{e0\,min}} \mp \frac{b}{1 + k}\,p\rho\right]. \qquad (7)$$

Temperature effects - The analysis of the obtained graphs shows that the average parameters R_b and C_k vary by less than 10 % when the temperature varies between

28047

Stabilization of the frequency S/106/61/000/009/005/008
A055/A127

+10° to + 40°C. The temperature-dependence of the average parameters R_n, C_e and b is much stronger; when the temperature rises, R_n decreases and b and C_e increase. Examining the variation of the oscillation frequency with the temperature, the author states that, for a 1°C variation (within the 20° - 60°C temperature range), the measured relative variation of the frequency is of the order of $(1 - 2) \cdot 10^{-5}$. Conclusions. - The emitter and the collector must be supplied by a common power-source: this permits compensation of the effect exerted on the oscillation frequency by the variations of the dc-components of the emitter current and of the collector voltage. To obtain adequate compensation, a correct choice of ξ and of the circuit's equivalent resistance is necessary. The formulae given in the article permit choosing values approximating the optimum ones. In the case of a nonconstant active load, the highest frequency-stability can be obtained at a determined Q of the circuit. The frequency-stability is the higher, the lower is the generated frequency with respect to the critical frequency of the transistor. - The frequency-stability of the transistorized self-oscillator in under-voltage operation is considerably greater than in overvoltage operation. There are 7 figures and 1 Soviet-bloc reference.

SUBMITTED: August 19, 1960.

Card 5/5

ZARKHI, L. D.

Ф. Е. [illegible]

Переходный процесс в полупроводниковом диоде при протекании через него в прямом направлении импульсов тока малой длительности.

Л. С. Берман

Приближенный метод расчета переходных процессов в полупроводниковых триодах при больших сигналах.

Л. Д. Зархи

Исследование работы плоскостного полупроводникового триода в схеме генератора синусоидальных колебаний при большом уровне сигнала.

М. А. Берг

Отрицательное сопротивление в двухэлектродных полупроводниковых приборах

С. А. Гаряинов

Полупроводниковые приборы с отрицательным сопротивлением и их применение в радиотехнических схемах.

10 июня

(с 10 до 16 часов)

Совместное заседание с секцией электронно-вычислительной техники.

В. Н. [illegible]

Динамический триггер на полупроводниковых приборах.

А. Ю. Гордонов,
Е. А. Гольдштейн,
Е. М. Зарин,
Г. В. Катаенко,
В. А. Калинин

Специальные элементы цифровых вычислительных машин на полупроводниковых приборах.

Л. Н. Патрикеева,
Т. М. Агаханян,
Н. С. Белова,
В. А. Грибанова,
В. И. Коновалов,
В. Н. Лебедев,
А. Г. Филиппов,
Ю. Н. Фаст

Комплекс полупроводниковых элементов в узлах цифровой вычислительной машины

В. И. Коновалов

Фронты выходных импульсов в транзисторном ключе с общим эмиттером с учетом нелинейной емкости коллектора.

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORIE), Moscow, 8-12 June. 1959

DIKOVICH, Valentina Vladimirovna, kand.tekhn.nauk; ZARKHI, L.I., kand. tekhn.nauk, nauchnyy red.; KAPLAN, M.Ya., red.izd-va; VORONETSKAYA, L.V., tekhn.red.

[Shallow rectangular shells of revolution] Pologie priamougol'nye v plane obolochki vrashcheniia. Leningrad, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 140 p. (MIRA 13:9)
(Elastic plates and shells)

ZARKHI, M. I.

"Experience in Operating the Electric Equipment of a Kolenergo System Hydroelectric Power Plant." p. 113

in book - New Developments in the Design of Electric Equipment for Hydroelectric Power Plants, 1957. 222 p. Moscow-Leningrad, Gosenergoizdat.
(Data on the Conference on Design and Operation, Moscow, 16-24 May 1956.)

ZARKHI, R.D.

Epidemic conditions in scarlet fever and its prevention. Zhur. mikrobiol. epid. i immun. 31 no. 5:122 My '60. (MIRA 13:10)

1. Iz infektsionnoy bol'nitsy Kuybyshevgidrostroya.
(SCARLET FEVER)

ZARKHI, R.D.

Hospital antibiotic therapy for pneumonia complicating whooping cough. Pediatriia, no.5:33-35 S-O '55. (MLRA 9:2)

1. Iz otdeleniya detskikh infektsiy Komsomol'skoy bol'nitsy (nach Ye. V. Dyupina) Medsanotdela stroitel'stva Kuybyshevskoy GES.
(WHOOPING COUGH, compl.
bronchopneumonia, ther. antibiotics)
(BRONCHOPNEUMONIA, etiol. and pathogen.
whooping cough, ther. antibiotics)
(ANTIBIOTICS, ther. use
bronchopneumonia, caused by whooping cough)

ZARKHI, V.

ZEL'DES, L.; ZARKHI, V.

Simplified method for mounting the radiator on a ZIS-150. Avt. transp. 32 no.5:35 My '54. (MIRA 7:7)
(Automobiles--Radiators)

[illegible], Ye. G.

Colitis

Result of the treatment of chronic colitis with rye bread. Sov. med. 16 No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress October 1952. UNCLASSIFIED.

YEFIMOVA, V.I.; ZARKHIDZE, V.A.

Materials on the fauna and ecology of rodents in the deserts of the northern Kara-Bogaz-Gol region. Izv. AN Turk. SSR. Ser. biol. nauk no.3:51-55 '64 (MIRA 18:2)

1. Turkmenskaya protivochumnaya stantsiya.

ZARKHIN, A. M.

USSR/Geological Prospecting
Drilling Machinery

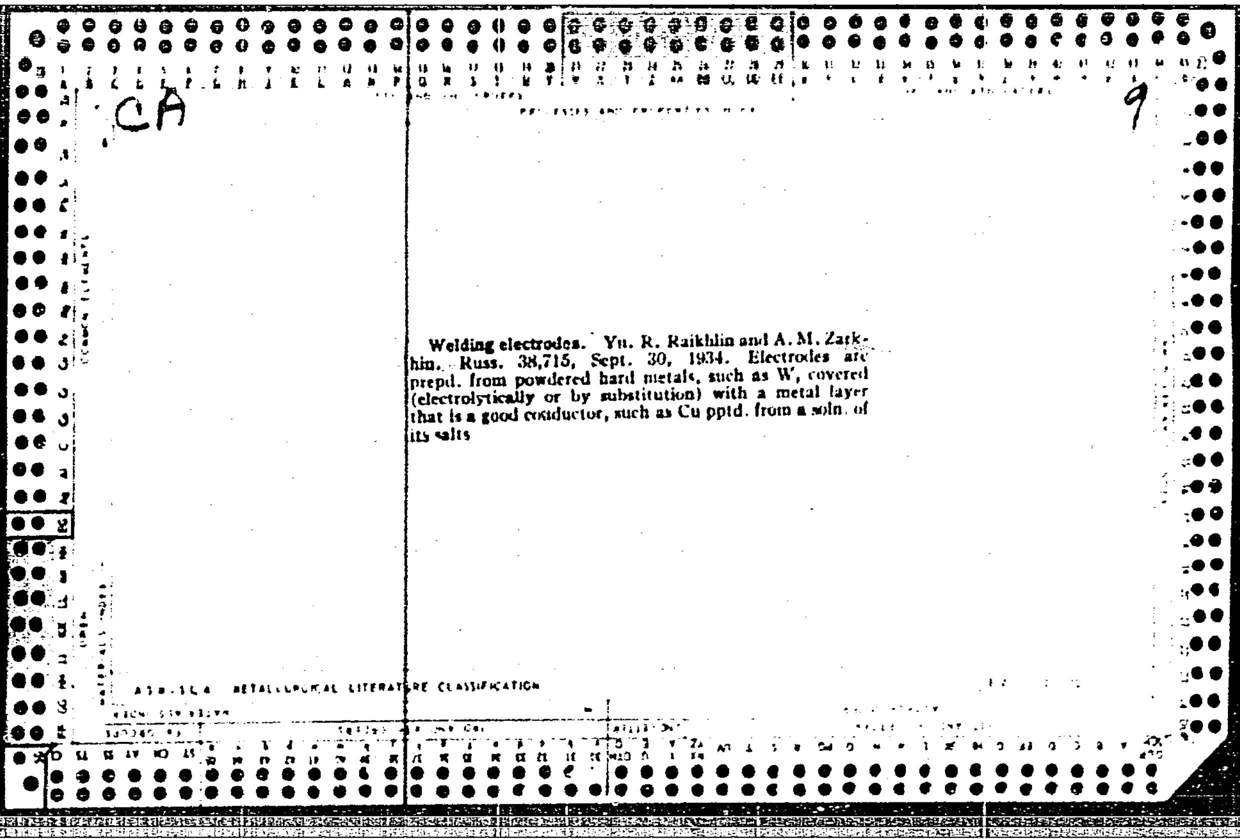
Jun 1946

"One of the Various Home-produced Small-diamond Drilling Crowns," Ya. A. Romantsev, A. M. Zarkhin, 7 pp

"Razvedka Nedr" No 3

Small-diamond crowns made by Nigrizoloto, in comparison with carbonate crowns in laboratory tests, showed greater durability and more productivity. Tables on the experiments and a diagram of the crown accompany the article.

PA 27T41



CA

9

Welding electrodes. Yu. R. Raikhlin and A. M. Zarkhin. Russ. 38,715, Sept. 30, 1934. Electrodes are prepd. from powdered hard metals, such as W, covered (electrolytically or by substitution) with a metal layer that is a good conductor, such as Cu pptd. from a soln. of its salts

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

7

PROCESSES AND PROPERTIES INDEX

Welding electrodes. Yu. R. Raikhlin and A. M. Zarkhin. Russ. 39,285, Oct. 31, 1934. A powder contg. a high-melting metal such as W or Mo, or its high-melting combination with C or N, is mixed with a soln. of latex in gasoline. The mixt. is dried, passed through a fine-mesh sieve and pressed into rods, which are baked and impregnated with an alloy of Cu and Al (in a fused state), or with other good metallic electric conductor.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

A.C.S. Ag Case

Method for making metalloceramic products. Yu. R. Raikhlin and A. M. Zarkhin. Russ. 56,975, April 30, 1940. 406. 17.—Such products are made from powdered metals to which may be added diamond dust. The molded powder is saturated with molten copper under pressure.
M.Ho.

ZARKHIN, A.M.

Practice of producing Soviet diamond bits. Trudy VNIIBT no.6:41-49 '62. (MIRA 16:6)

(Boring machinery)

GUSMAN, M.T.; ZARKHIN, A.M.

Testing diamond bits in deep drilling fields of the Azerbaijan Association for Petroleum Production. Neft. khoz. 38 no.12:11-17
(Azerbaijan—Boring machinery—Testing)

LOSEV, Il'ya Maksimovich; BELONOGOV, P.; ZARKHIN, B.

[Utilize working time more preductively; analysis of the workday by the worker]Produktivnee ispol'zovat' rabochee vremia; opyt provedeniia samofotografii rabochego dnia. Moskva, Profizdat, 1961. 55 p. (MIRA 15:10)
(Labor productivity)

ZARKHIN, B.I.; PUSHKINA, M.A.; SLUTSKIY, M.Ye.

Electrometric amplifier. Prib. i tekh. eksp. 8 no.4:90-94 Jl-Ag '63. (MIRA 16:12)

1. Spetsial'noye konstruktorskoye byuro analiticheskogo priborostroyeniya AN SSSR.

L 34807-66 EWT(1)/FCC GW/WS-2

ACC NR: AP6019599 SOURCE CODE: UR/0293/66/004/003/0457/0462

AUTHORS: Pavlenko, V. A.; Zarkhin, B. I.; Rafal'son, A. E.; Slutskiy, M. Ye. 54 B

ORG: none

TITLE: High-sensitivity radio-frequency mass spectrometer for investigating the ionic and neutral composition of the upper atmosphere 12

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 3, 1966, 457-462

TOPIC TAGS: mass spectrometer, upper atmosphere, atmospheric sampling / MKh6407M mass spectrometer

ABSTRACT: An MKh6407M 24 high-sensitivity radio-frequency mass spectrometer, 10 intended for analyzing the ionic and neutral composition of the upper atmosphere, is described. The device is characterized by high partial sensitivity, power requirements of 3 w for the ion analysis mode of operation and 5 w for the neutral analysis mode, and small size (2.5 kg). The spectrometer consists of two analyzers, one for the range 1 - 4 amu and the other for 12 - 50 amu, and the electronic unit. The partial sensitivity of the light mass analyzer to H_2 is 3×10^{-11} mm Hg and that of the medium mass analyzer to A is 1×10^{-11} mm Hg. The form of the analyzer is shown in Fig. 1. The basic circuit of the analyzer and a block diagram of the spectrometer are also presented and discussed.

Card 1/2 UDC: 621.384.8:551.535.4

L 34803-66

ACC NR: AP6019599

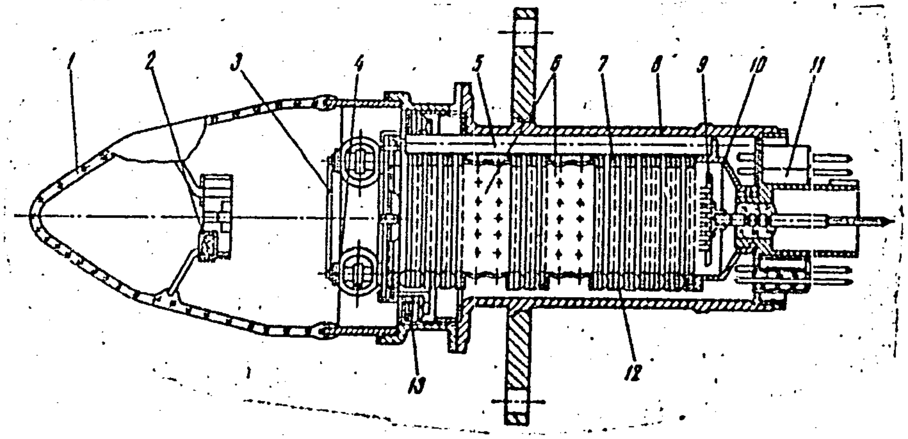


Fig. 1. Analyzer in section. 1 - glass nipple; 2 - getter; 3 - suppressor-grid; 4 - ion source cylinder; 5 - ceramic rod; 6 - drift spaces; 7 - grid; 8 - case; 9 - collector; 10 - collector screen; 11 - base; 12 - packing ring; 13 - securing spring.

Typical spectra are shown, and the basic characteristics of the mass spectrometer are listed. Orig. art. has: 5 figures. [04]

SUB CODE: 04,14/ SUBM DATE: 24Aug65/ ORIG REF: 004/ ATD PRESS: 5030

Card 2/2

ACCESSION NR: AP4003738 S/0293/63/001/002/0296/0302

AUTHOR: Slutskiy, M. Ye.; Zarkhin, B. I.; Pushkina, M. A.

TITLE: Miniaturized broadband electrometer amplifier

SOURCE: Kosmicheskiye issledovaniya, v. 1, no. 2, 1963, 296-302

TOPIC TAGS: dc amplifier, transitorized amplifier, mass spectrometer, spaceborne miniaturized amplifier, broadband measuring amplifier, miniaturized measuring amplifier

ABSTRACT: An improved high-sensitivity transistorized d-c amplifier, specially designed for use in mass spectrometers, is described. Its basic specifications are as follows: 1) range of measured positive-polarity currents, 10^{-11} to 10^{-14} amp; 2) relative error, ± 3%; 3) time constant of the input circuit, 0.01 sec; 4) input impedance, 10^{12} ohm; 5) voltage fluctuation at the output, 7—8 mv; 6) range of operating temperatures, -40 to +60C; 7) d-c power supply, 14 ±2 v; 8) power consumption, 0.5 w; 9) weight, 300 g; and 10) overall size, 100 x 50 x 50 mm. The amplifier uses one vacuum tube, an I-1-type electrometric pentode with a high voltage gain at a low level of grid

Card 1/2

ACCESSION NR: AP4003738

current. The power supply of the amplifier circuits is effected by a transistorized inverter operating at 8—10 kc. The high converter efficiency (up to 85%) ensures voltage stability within 0.1% in the feedback transformer windings of the inverter, with primary voltage stabilization by means of a three-stage transistorized amplifier. The d-c amplifier is placed in a thin-walled steel housing which protects it from the interference of electric and magnetic fields. The described amplifier is recommended for use in rockets and artificial earth satellites. Orig. art. has: 7 figures.

ASSOCIATION: none

SUBMITTED: 07Jan63	DATE ACQ: 26Dec63	ENCL: 00
SUB CODE: GE	NO REF SOV: 006	OTHER: 001

Card 2/2

L 5041-66 FSS-2/EWT(1)/FS(v)-3/FCC/EWA(h)/ETC(m) IJP(c) TT/WW/GW

ACC NR: AP5026057 SOURCE CODE: UR/0293/65/003/005/0768/0781

AUTHOR: Zarkhin, B. I.; Istomin, V. G.; Rafal'son, A. E.; Slutskiy, M. Ye.
44,55 44,55 44,55 44,55

ORG: none

22
33

21,44,55

TITLE: Radio frequency mass spectrometer for the Electron satellites

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 5, 1965, 768-781

TOPIC TAGS: spectrometer, mass spectrometer, satellite/Electron satellite

12 12 12

ABSTRACT: Mass spectrometer data on the ionosphere has to date been obtained mostly at limited altitudes and for constituents with low mass numbers. The Electron satellites have been equipped with new rf mass spectrometers in order to achieve a more complete analysis of particles at altitudes above 1000 km than has yet been reported. The spectrometer, designated MKh-6405, is installed in slightly differing forms on the Electron satellites and is capable of discriminating ionic or neutral particles up to a mass number of 34. An overall view is shown in Fig. 1. An ion source is included for initial calibration. For this purpose, the analyzer is filled with a control mixture of 35% H_2, 35% He, 25% Ne, and 5% Ar at a total pressure of 1×10^{-5} mm Hg. A low-energy electron gun provides the desired ionization of the control mixture.

Card 1/5 UDC: 621.384.8:525.7

L 5041-66

ACC NR: AP5026057

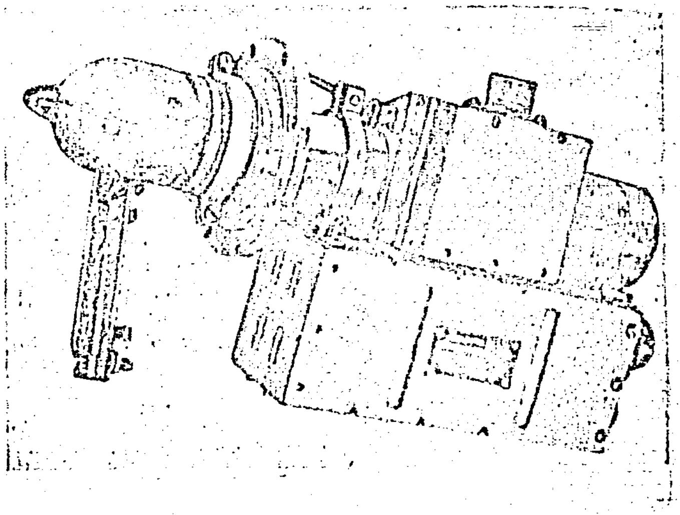


Fig. 1. Overall view of the MKh-6405

In operation, the analyzer envelope is punctured on in-flight command, opening it to the atmosphere. The main features of the analyzer portion are shown in Fig. 2, including the

Card 2/5

L 5041-66

ACC NR: AP5026057

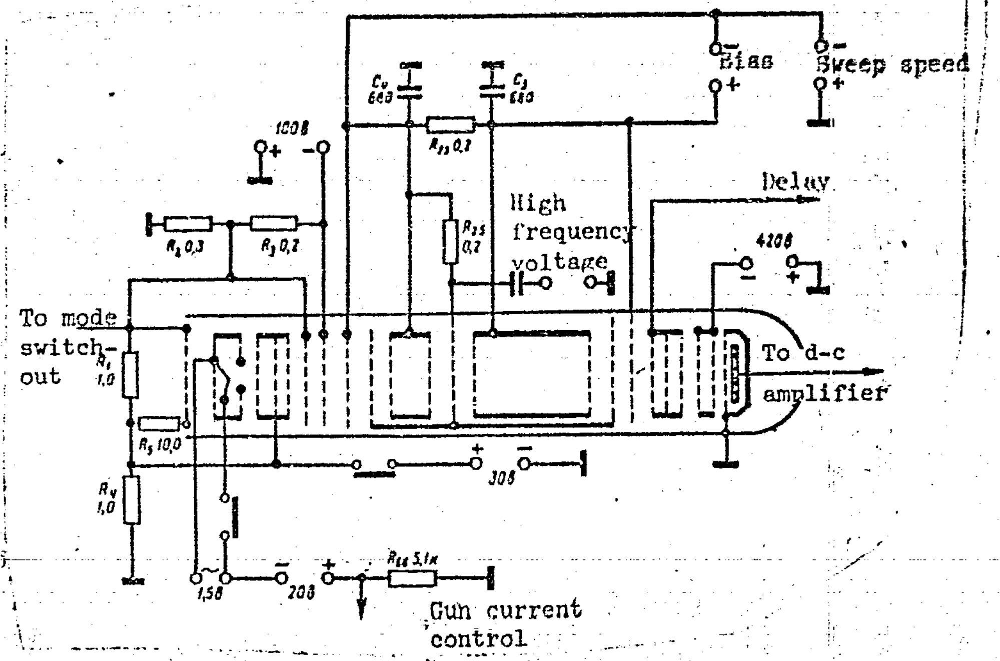


Fig. 2. Analyzer section of the MKh-6405

Card 3/5

electron gun and accelerating grids. For ion analysis, the gun is switched off, and a potential of -60 v is applied to the input grids; for neutral particle analysis, a potential of +30 v is applied to the grids, thus excluding atmospheric ions. The electronic subassemblies which generate the mass discriminating modes for the analyzer are described; these include an ion current amplifier, high-frequency oscillator, sawtooth sweep generator, switching unit, and a stabilized power supply. Both transistors and ruggedized monolithic subminiature tubes are used. The ion current amplifier provides outputs [illegible] three sensitivities, in the ratio of 0.08:1:10, to telemetry channels. Other pertinent specifications of the spectrometer and its analyzer portion are given in the accompanying table.

Spectrometer:
- Mass ranges, 1—2 and 4—34 amu
- Detection sensitivity, average mass ion, 10 ions/cm^3
- Duration of mass range sweep, 3 sec
- Power drain, ion analysis mode, 3 w
- Weight, 2 kg

Analyzer:
- Number of selector stages, 3
- Number of cycles in the stages, 2—7
- Grid spacing, 4 mm
- Grid mesh, 0.4 mm
- Diameter of input port, 25 mm

L 5041-66

ACC NR: AP5026057

Frequency for the 1—2 amu range, 16.3 Mc
Frequency for the 4—34 amu range, 4.08 Mc
Diameter, 50 mm
Length, 300 mm
Weight, 0.8 kg

Orig. art. has: 2 tables and 11 figures. [SH]

SUB CODE: OP, SV/ SUBM DATE: 02Jun64/ ORIG REF: 012/ OTH REF: 004/ ATD PRESS: 4132

Card 5/5

ZARKHIN, Iosif Borisovich, kandidat farmatsevticheskikh nauk; GROMBAKH, S.M., redaktor; ZAKHAROVA, A.I., tekhnicheskiy redaktor

[Historical sketches of Russian pharmacy; the 18th and the first half of the 19th century] Ocherki iz istorii otechestvgunoi farmatsii; XVIII i pervoi poloviny XIX veka. Moskva, os. izd-vo med. lit-ry, 1956. 186 p. (MLRA 10:2)
(PHARMACY--HISTORY)

1. ZARKHIN, I. B.

2. USSR (600)

4. Pharmacy

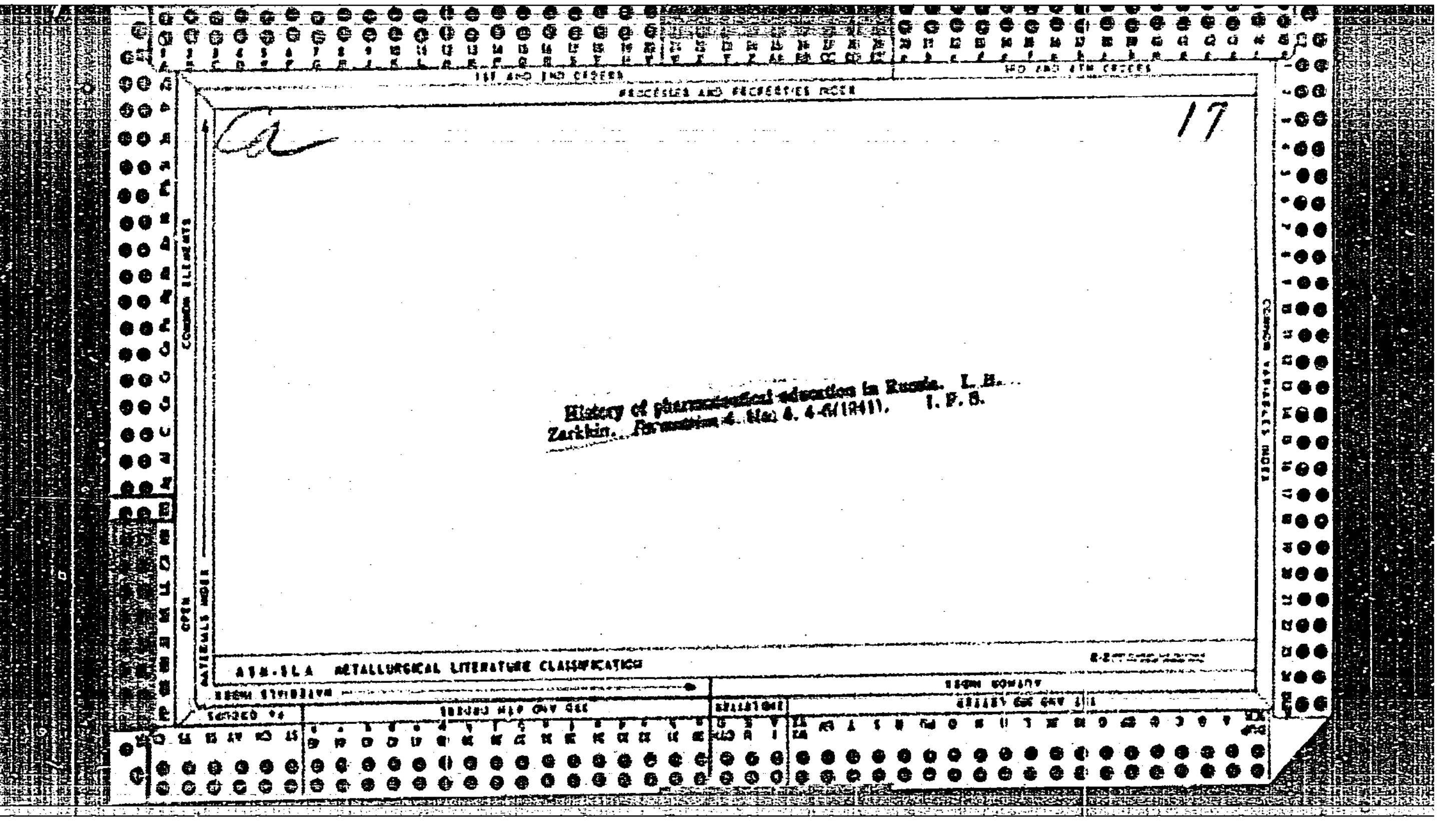
7. From the past of Russian pharmacy of the first half of the 19th century. Apti
delo no. 6, 1952

9. Monthly List of Russian Accessions, Library of Congress. March 1953. Unclassified.

ZARKHIN, IOSIF BORISOVICH

ZARKHIN, Iosif Borisovich

[Historical sketch of Russian pharmacy of the 18th and first half of the 19th century] Ocherki po istorii otechestvennoy farmatsii XVIII i pervoi poloviny XIX veka. Moskva, Medgiz, 1956. 186 p.
(PHARMACY--HISTORY) (MLRA 10:9)


1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
3RD AND 4TH ORDERS
COMMON ELEMENTS
MATERIALS INDEX
OPEN
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Ca

17

History of pharmaceutical education in Russia. L. B. Zarkhin. Farmatsiya 4, No. 4, 4-6(1941). I. F. S.

ZARKHIN, M.M.

Procedures for changing over a municipal power distribution network to closed-loop operation and special features of this mode. Trudy LISI no.41:114-117 '62. (MIRA 17:6)

1. Leningradskaya kabel'naya set'.

ZARKHIN, M.M.

PHASE I BOOK EXPLOITATION SOV/4452

Volchkov, Konstantin Konstantinovich, Boris Yakovlevich Grishkan, and Mikhail Markovich Zarkhin

Ekspluatatsiya setevykh sooruzheniy gorodskoy elektricheskoy seti (Operation of Line Structures of Municipal Electric Networks) Moscow, Gosenergoizdat, 1960. 394 p. Errata slip inserted. 20,000 copies printed.

Ed.: A.P. Shcheglov; Tech. Ed.: O.S. Zhitnikova.

PURPOSE: This book is intended for the foremen, electricians, and other workers of municipal electric networks. It may also be used as a handbook by technical personnel engaged in the operation or design of municipal networks and technical personnel of electric networks servicing industrial establishments.

COVERAGE: The book examines the arrangement and operation of the electric equipment and structures of municipal electric networks. The procedure of operation, maintenance, repair work, and the technical norms for work and materials based on the existing regulations are indicated. Information is given on accident prevention measures. The book is based on experience gained from many years of

Card 1/6

ZARKHIN, M. M. Cand Tech Sci -- (diss) "Calculation, analysis, and planning of electric-power losses in urban networks." Len, 1958. 17 pp with ~~charts~~ diagrams (Min of Higher Education USSR. Mos Engineering ~~and~~ Economics Inst im S. Ordzhonikidze), 100 copies (KL, 14-58, 113)

ZARKHIN, M.M.

VOLCHKOV, Konstantin Konstantinovich; GRISHKAN, Boris Yakovlevich; ZARKHIN, Mikhail Markovich; MANN, A.K., kand.tekhn.nauk, retsenzent; BARANOV, B.M., inzh., retsenzent; POKLAD, P.G., inzh., retsenzent; SMIRNOV, L.P., inzh., retsenzent; FOMICHEV, G.I., inzh., retsenzent; FRIDKIN, I.A., inzh., retsenzent; SHCHEGLOV, A.P., inzh., red.; ZHITNIKOVA, O.S., tekhn.red.

[Line structures of municipal electric networks] Ekspluatatsiia setevykh sooruzhenii gorodskoi elektricheskoi seti. Pod red. A.P. Shcheglova. Moskva, Gos.energ.izd-vo, 1960. 394 p. (MIRA 13:5)

1. Moskovskaya kabel'naya set' (for Baranov, Poklad, Smirnov, Fomichev, Fridkin).
(Electric power distribution)

ZARKHIN, M.

105-9-17/32

AUTHOR	Zarkhin M.M., Engineer
TITLE	Experience in Reducing Losses in Urban Networks. (Opyt bor'by s poteryami v gorodskoy elektricheskoy seti - Russian)
PERIODICAL	Elektrichestvo, 1957, Nr 9, pp 60 - 62 (U.S.S.R.)

ABSTRACT

The losses in urban networks amount to: 11% at Kazan', 23% at Kaliningrad (Koenigsberg), and in some cases even to 29%. At Leningrad it was possible to reduce the losses from 7 to 3% within 10 years. In the case of accurate operation and construction of the network losses must not be higher than 7%. Above all, the characteristics of the network have to be considered and taken into account systematically. Experience gathered at Leningrad showed that losses in high voltage networks amounted to 35% of the total losses, those in transformers to from 15 to 25% and those of low voltage to from 40 to 50%. Decisive for obtaining a minimum of losses is the condition that the resistances in the individual conduction domains decrease in the direction of the feeding source. The characteristic factor for satisfying this condition varies between 0,7 and 1,5. The reduction of losses at Leningrad is due to the following steps undertaken: Liquidation of the obsolete one-phase network with 2 and 3 kV and the three-phase network with 2 kV. Changing over to the low-voltage network with 127 V and 220 V. This was carried out rapidly and economically by using a lead cable covering as neutral conductor. Fundamentally important was changing over the main line to a bilateral feed and the parallel

Card 1/2

AYZENBERG, B.L., kandidat tekhnicheskikh nauk, dotsent; ZARKHIN, M.M., inzhener;
MANOYLOV, V.Ye., kandidat tekhnicheskikh nauk.

Calculation and reduction of losses of electrical energy in city networks.
Trudy LIEI no.7:129-141 '54. (MLRA 9:9)
(Electric networks)

ZARKHIN, M.M.

Electrical Engineering Abst.
Vol. 57 No. 676
Apr. 1954
Electrical Engineering

(1) [illegible]

621.316.1.017

1447. On the calculation of energy losses in urban power supply systems. M. M. ZARKHIN. *Elektrichestvo*, 1953, *No.* 10, 9–13. *In Russian.*

The losses are calculated on the basis of the mean load per cable section. Coefficients are introduced accounting for the number of sections to be supplied by one outgoing line from the substation, the distance of the gravity centre of the load from the substation and the longest distance from the substation. This simple method gives reasonable accuracy and has been used for 7 years in different towns.

F. BUSEMANN

ZARKHIN, M.M.

FILIMONOV, P.V., inzhener.

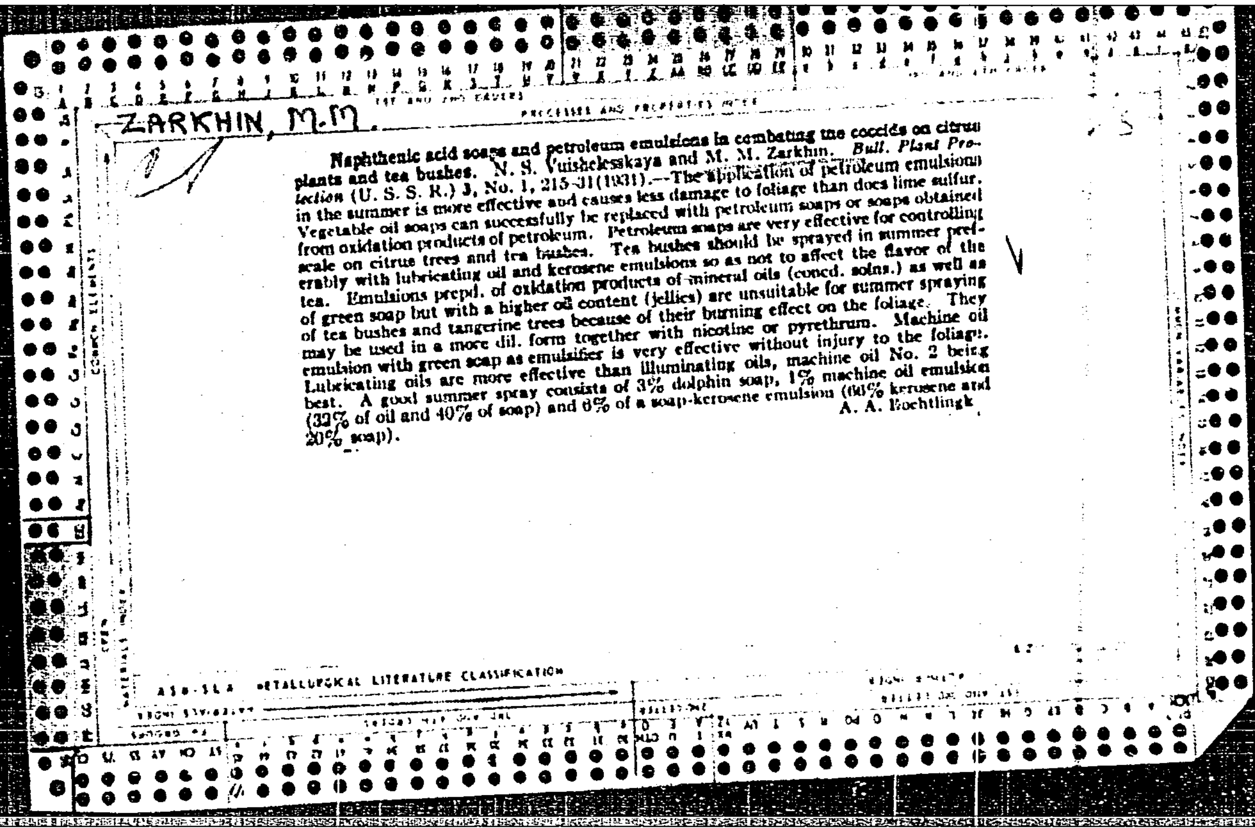
M.M.Zarkhin's article: "Calculating electric energy losses in city networks." Elektrichestvo no.5:85 My '54. (MLRA 7:6)

1. Gosenergonadzor MES.
(Electric networks) (Zarkhin, M.M.)

ZARKHIN, M. M.

ZARKHIN, M. M.: "Calculating, analyzing, and planning electric-power losses in city networks". Leningrad, 1955. Min Higher Education USSR. Moscow Engineering-Economics Inst imeni S. Ordzhonikidze. (Dissertations for the Degree of Candidate of Technical Sciences.)

So: Knizhnaya letopis' No. 49, 3 December 1955. Moscow.



PROCESSES AND PROPERTIES INDEX
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZARKHIN, M.M.

Naphthenic acid soaps and petroleum emulsions in combating the coccids on citrus plants and tea bushes. N. S. Vuishelesskaya and M. M. Zarkhin. *Bull. Plant Protection* (U. S. S. R.) 3, No. 1, 215-31(1931).—The application of petroleum emulsions in the summer is more effective and causes less damage to foliage than does lime sulfur. Vegetable oil soaps can successfully be replaced with petroleum soaps or soaps obtained from oxidation products of petroleum. Petroleum soaps are very effective for controlling scale on citrus trees and tea bushes. Tea bushes should be sprayed in summer preferably with lubricating oil and kerosene emulsions so as not to affect the flavor of the tea. Emulsions prepd. of oxidation products of mineral oils (concd. solns.) as well as of green soap but with a higher oil content (jellies) are unsuitable for summer spraying of tea bushes and tangerine trees because of their burning effect on the foliage. They may be used in a more dil. form together with nicotine or pyrethrum. Machine oil emulsion with green soap as emulsifier is very effective without injury to the foliage. Lubricating oils are more effective than illuminating oils, machine oil No. 2 being best. A good summer spray consists of 3% dolphin soap, 1% machine oil emulsion (32% of oil and 40% of soap) and 6% of a soap-kerosene emulsion (60% kerosene and 20% soap). A. A. Boehtlingk

ZARKHIN, M.M.

MERKUL' V. E., BAGDASAROW A.A., AL'PERIN P.M., GUREVICH I.B., LOGINOVA F.E., CHUKANOVA Z.I., SHKERKO E.A. ZARKHIN M.M.

Sostoianie serdechno-sosudistoi sistemy i krovetvorenie pri gipertonicheskoi bolezni. /Condition of the cardiovascular system and hemopoiesis in hypertension/ Ter. arkh. 23:2 Mar-Apr 51 p. 13-26.

1. Professor Bagdasarov, Corresponding Member of the Academy of Medical Sciences USSR. 2. Of the Hospital Therapeutic Clinic (Director--Prof. A. A. Bagdasarov) of the Pediatric Faculty of the Second Moscow Medical Institute imeni I. S. Stalin.

CLML Vol. 20, No. 10 Oct 1951

ZARKHIN, M.M.

AL'PERIN, P. M.;IVANOVA, N. A.; ZARKHIN, M. M.;STEPANOVA, A. V.

Liver function in anemias. Ter. arkh., Moskva 23 no. 6:56-69
Nov-Dec 1951. (CLML 21:3)

1. Of the Hemotherapeutic Clinic (Head -- Prof. M. S. Dul'tsin), Central Institute of Hematology and Blood Transfusion, and of the Hospital Therapeutic Clinic (Director -- Prof. A. A. Bagdasarov, Corresponding Member of the Academy of Medical Sciences USSR) of the Pediatric Faculty of Second Moscow Medical Institute imeni I. V. Stalin.

ZARKHIN, M.M.

Problems in the economics and technological development of the leather industry in Moldavia. Uch. zap. Kish. un. 53:143-152 '61. (MIRA 15:1)

(Moldavia--Leather industry--Costs)

KLEBANOV, L.D.; KONONOV, E.Z.; SHAROVA, R.K.; ZARKHIN, M.M.

Problems of mechanization, standardization of personnel and expenditure of materials in municipal electric power distribution networks. Trudy LIEI no.51:236-262 '64. (MIRA 18:11)

ZARKHIN, S.M.

25(5) PHASE I BOOK EXPLOITATION SOV/2166

Opyt ratsionalizatsii kuznechnogo proizvodstva; k 250-letiyu Leningrada (Experience in Improving Forge Work; On the 250th Anniversary of Leningrad) [Leningrad] Lenizdat, 1957. 194 p. 3,000 copies printed.

Ed. (Title page): P.V. Kamnev; Ed. (Inside book): Ye. V. Yemel'yanova; Tech. Ed.: N.I. Rodchenko

PURPOSE: The collection of articles is intended for workers and engineers in forge shops and also for designers of machinery in related branches of machine manufacturing.

COVERAGE: The book describes the experience gained at several Leningrad plants in the rationalization of manufacturing processes, modernization of equipment, and improvement in the economics and planning of forging production. Tables and drawings accompany every article. No personalities are mentioned. There are no references.

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Gil'denblat, S.N. Practices in Modernizing the Power Screw Percussion Press 167

Kats, A.S. [Candidate of Economic Sciences and Docent, Inzhenerno-ekonomicheskiy institute], The Most Important Methods for Improving the Economics and Planning of Forge Shops 173

AVAILABLE: Library of Congress (TS 225.K336)

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ZARKHIN, S.M.

PHASE I BOOK EXPLOITATION SOV/4944

Kamnev, P.V., Candidate of Technical Sciences, Docent, Ed.

Peredovoy opyt kovki (Advanced Experience in Forging) [Leningrad] Lenizdat, 1959. 246 p. 5,000 copies printed.

Ed.: Ye.V. Yemel'yanova; Tech. Ed.: I.M. Tikhonova.

PURPOSE: This collection of articles is intended for workers and engineers in die-forging shops and for personnel of affiliated branches in the machine industry.

COVERAGE: The articles deal with the advanced experience of a number of Leningrad plants in mechanizing and improving production methods in die forging. Recommendations are made concerning the specialization of forging shops, and the further development of open-die forging processes. Articles by operators-innovators in forging shops of the Novo-Kramatorskiy (New Kramatorsk) and Ural'skiy (Ural) machinery plants are included. The collection contains some of the papers which were discussed during the conference in June 1958 (P.V. Kamnev, Chairman) on open-die forging, called by the regional section for the pressworking of metals of the Leningradskoye Pravleniye nauchno-tekhnicheskogo obshchestva mashinostroitel'noy promyshlennosti (Leningrad Administration of the Scientific and Technical Society of the Machine Industry) and the Leningradskiy Dom nauchno-tekhnicheskoy propagandy (Leningrad House of Scientific and Technical Propaganda). The foreword includes a list of the participants who submitted papers to the aforementioned conference. There are no references.

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AVAILABLE: Library of Congress

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VK/wrc/sfm
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ZARKHIN, V.A.

KONYUKHOVA, Lidiya Ignat'yevna; ZARKHIN, V.A., retsenzent, kandidat
ekonomicheskikh nauk; ARENS, Ye.N., nauchnyy redaktor;
TORMOZOVA, L.I., redaktor; DMITRIYEVA, N.I., tekhnicheskiy redaktor

[The economical use of cloth in the production of knitted
underwear] Ekonomnoe ispol'zovanie polotna v proizvodstve
trikotazhnogo bel'ia. Moskva, Gos. nauchno-tekhn. izd-vo M-va
legkoi promyshl. SSSR, 1957. 77 p. (MIRA 10:4)
(Underwear) (Knit goods)

ZARKHIN, V.A., kandidat ekonomicheskikh nauk; SMIRNOV, T.I., inzhener.

Let us introduce money saving machinery and techniques in the knitting of outer garments. Leg. prom. 15 no.11:10-14 N '55.
(Knitting machines) (MLRA 9:2)

ZAPKHIN, V. A.

36223 Organizatsiya vnutrfabrichnogo khozyaystvennogo rascheta. (Iz opyta Nogin. Chulochnoy fabriki. Mosk. Obl.) Legkaya prom-st', 1949, No. 10, S. 14-16

SO: Letopis' Zhurnal'nykh Statey, No. 49, 1949

MAYEROV, I.; ZARKHINA, A.

Produce more, spend less. Mest.prom.i khud.promys. 3 no.12:27 D '62. (MIRA 16:2)

1. Nachal'nik otdela finansirovaniya narodnogo khozyaystva oblastnogo finansovogo otdela, Grodno, Belorusskoy SSR (for Mayerov). 2. Starshiy ekonomist otdela finansirovaniya narodnogo khozyaystva oblastnogo finansovogo otdela, Grodno, Belorusskoy SSR (for Zarkhina).

(Grodno Province--Industrial management)

PANOV, D.G., prof., otv.red.; GAVRILYUK, F.Ya., prof., red.; MALIK, S.A., dotsent, red.; ZARKHINA, I.Ya., red.; PAVLICHENKO, M.I., tekhn.red.

[Division of the Northern Caucasus and the lower Don Valley into natural regions; reports of an intercollegiate conference] Prirodnoe raionirovanie Severnogo Kavkaza i Nizhnego Dona; doklady. Rostov-na-Donu, Izd-vo Rostovskogo univ., 1959. 110 p. (MIRA 13:12)

1. Mezhvuzovskoye soveshchaniye po prirodnomu rayonirovaniyu Severnogo Kavkaza i Nizhnego Dona. 1959.
(Caucasus, Northern--Physical geography)
(Don Valley--Physical geography)

SOKOLOV, V.M.; ZARKHIN, V.A.

Expansion of the knit goods industry during the seven-year plan. Tekst. prom. 19 no.6:5-10 Je '59. (MIRA 12:9)

1. Nachal'nik podotdela otdela legkoy promyshlennosti Gosplana SSSR (for Sokolov). 2. Rukovoditel' laboratorii Vsesoyuznogo nauchno-issledovatel'skogo instituta triketazhnoy promyshlennosti (for Zarkhin).

(Knit goods industry)

ZARKHIN, V.A., kand.ekonom.nauk; BAD'INA, Ye.M., inzh., mladshiy nauchnyy sotrudnik

Technical and economic indices of the manufacture of women's stockings on circular and cotton machines. Tekst. prom. 21 no.10:64-68 O '61. (MIRA 14:10)

1. Rukovoditel' laboratorii Vsesoyuznogo nauchno-issledovatel'skogo institut trikotazhnoy promyshlennosti (for Zarkhin).
(Hosiery industry)
(Knitting machines)

PROTSENKO, Petr Ivanovich; POZHARSKIY, F.T., red.; ZARKHINA, I.Ya., red.;
PAVLICHENKO, M.I., tekhn. red.

[Outline of the development of chemistry at the Rostov University]
Ocherk razvitiia khimii v Rostovskom universitete. Rostov-na-Donu,
Izd-vo Rostovskogo univ., 1960. 213 p. (MIRA 14:9)
(Rostov-on-Don—Chemistry—Study and teaching)

ZARKHINA, M.Ye., red.; MALEK, Z.N., tekhn.red.

[Transition to a shorter workday and new wage schedule in the printing industry; recommendations] Perevod na sokrashchennyi rabochii den' i novye usloviia oplaty truda v poligrafii; rekomendatsii. Moskva, Gos.izd-vo "Iskusstvo," 1960. 125 p. (MIRA 13:7)

(Printing industry) (Hours of labor) (Wages)

BEREZIN, Boris Ivanovich; ZAGARINSKAYA, Lyudmila Aleksandrovna; ZARKHINA, M.Ye.; ALEKSANDROV, V.I., tekhn.red.

[Printing materials] Poligraficheskie materialy. Moskva, Gos. izd-vo "Iskusstvo," 1955. 618 p. (MIRA 12:3)
(Printing machinery and supplies)
(Bookbinding--Equipment and supplies)

BESSTRASHNOV, Valentin Konstantinovich; ZARKHINA, M.Ye, redaktor; PASHCHINSKAYA, G.N., redaktor; CHICHERIN, A.N., tekhnicheskiy redaktor.

[Electric equipment in printing plants] Elektrooborudovanie poligraficheskikh predpriiatii. Moskva, Gos. izd-vo "Iskusstvo", 1956. 267 p. (Printing machinery and supplies)(Electric machinery) (MLRA 9:5)

ZARKHINA, R.B.

Two-dimensional problem of moments. Dokl. AN SSSR 124 no.4:743-746 F '59. (MIRA 12:1)

1. Lipetskiy gosudarstvennyy pedagogicheskiy institut. Predstavleno akademikom A.N. Kolmogorovym.
(Functional analysis)

16(1)

AUTHOR: Zarkhina, R.B. SOV/20-124-4-3/67

TITLE: On the Two-Dimensional Problem of Moments (O dvumernoy probleme momentov)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 4, pp 743-746 (USSR)

ABSTRACT: Let R* be the ring of all polynomials P in k variables; let f(P) be a linear functional. The k-dimensional momentum problem generated by f consists in the proof of the existence and uniqueness as well as in the construction of a non-negative completely additive function defined and finite on all Borel sets of the k-dimensional Euclidean space ${}_k$, and which makes possible the integral representation f(P)= Pd , where the ${}_k$ integral is understood in the sense of Lebesgue-Stieltjes. The author's principal result consists in the proof of the fact that for k 1 there exists a strongly positive functional for which the generated momentum problem is unsolvable (i.e. the desired

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On the Two-Dimensional Problem of Moments SOV/20-124-4-3/67

does not exist). For the proof of some further similar results the author uses the dissertation of M.S.Lifshits [Ref 3]. The author thanks I.M.Gel'fand for his help. There are 3 references, 2 of which are Soviet, and 1 German.

ASSOCIATION: Lipetskiy gosudarstvennyy pedagogicheskiy institut (Lipetsk State Pedagogical Institute)

PRESENTED: October 10, 1958, by A.N.Kolmogorov, Academician

SUBMITTED: April 16, 1958

Card 2/2

EXCERPTA MEDICA Sec 7 Vol 10/8 Pediatrics Aug 56

1678. ZARKHI R.D. • The treatment of whooping cough-pneumonia in the hospital (Russian text) PEDIATRIJA 1955, 5 (33-35)
Fifty-four infants aged from less than 6 months up to 14 months were treated with 4 various methods. Fifteen cases of medium gravity were treated with 25,000 U./kg. of streptomycin daily for 15 days, 10 of the same gravity with albomycin. The effect was good and essentially the same with both antibiotics. Twenty-five of the gravest cases were treated with streptomycin + penicillin; the effect was prompt and excellent. Four grave cases were treated with streptomycin + albomycin; the effect was good.

Najman - Zagreb (XX, 7)

ZAR'KOV, A.I.

From work practices in automating a water-pumping station. Vod. i san. tekh. no.11:35 N '60. (MIRA 13:11)
(Pumping stations)